

Appl. No. 10/660,084
Am dt. dated November 17, 2004
Reply to Office action dated August 17, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Amended) A control system for an AC motor having a predetermined horsepower rating, comprising:

a plurality of integrated AC motor control systems each of which having a horsepower rating less ~~that than~~ the AC motor to be controlled, each of said integrated systems comprising an input rectifier section, a DC bus ~~section~~ section, an output inverter section and a controller section;

a common, 3 phase AC input communicating with the rectifier section of each integrated control system;

a common DC bus communicating with the DC bus section of each integrated control system;

a common, 3 phase, variable frequency, pulse-width-modulated output communicating with the output inverter section of each integrated control system; and

a parallel controller interfaced with each integrated control system controller.

2. (Amended) A method of controlling an AC motor of predetermined horsepower, comprising ~~the steps of:~~:

providing a plurality of integrated AC motor control systems each having a horsepower rating less ~~that than~~ the AC motor to be controlled and each of said integrated control systems comprising an input rectifier section, a DC bus ~~section~~ section, an output inverter section and a controller section;

applying a common, 3 phase AC input to the rectifier section of each integrated control system;

supplying a common DC bus for the DC bus section of each integrated control system;

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generating a common, 3 phase, variable frequency, pulse-width-modulated output from the output inverter sections of each integrated control system; and controlling the AC motor with a parallel controller interfaced with each integrated control system controller.

3. (New) A control system for a polyphase AC motor having a predetermined horsepower rating, comprising:

two or more integrated AC motor controllers, each integrated controller having a horsepower rating less than the horsepower rating of the AC motor to be controlled, each integrated controller comprising a rectifier section, an inverter section and a controller section;

the rectifier section of each integrated controller being supplied with polyphase AC power;

the inverter section of each integrated controller generating a polyphase, variable frequency, pulse-width-modulated power output; and

a parallel controller communicating with and controlling each integrated controller to thereby control the AC motor.

4. (New) The control system of claim 3, wherein the motor is rated at 800 horsepower or greater

5. (New) The control system of claim 3, wherein each integrated controller is rated for 400 horsepower or less.

6. (New) The control system of claim 3, wherein the number of integrated controllers is 3 to 8.

7. (New) The control system of claim 7, further comprising a dynamic brake.

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8. (New) The control system of claim 7, wherein the dynamic brake is a chopper circuit.
9. (New) The control system of claim 7, wherein the dynamic brake is intelligent.
10. (New) The control system of claim 7, wherein the dynamic brake is controlled by the parallel controller.
11. (New) The control system of claim 3, further comprising a conditioning section.
12. (New) A method of controlling an AC motor of predetermined horsepower, comprising:
providing a plurality of integrated AC motor control systems each having a horsepower rating less than the AC motor to be controlled and each of the integrated control systems comprising a rectifier section, an inverter section and a controller section;
supplying polyphase AC power to the rectifier section of each integrated control system;
generating a polyphase, variable frequency, pulse-width-modulated power signal from the inverter sections of each integrated control system;
interfacing a parallel controller with each integrated control system; and
controlling each integrated control system with the parallel controller to thereby control the AC motor.
13. (New) The method of claim 12, wherein the motor is rated at 800 horsepower or greater
14. (New) The method of claim 12, wherein each integrated control system is rated for 400 horsepower or less.
15. (New) The method of claim 12, wherein 3 to 8 integrated control systems are provided.

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16. (New) The method of claim 12, further comprising: providing a dynamic brake.

17. (New) The method of claim 16, wherein the dynamic brake is a chopper circuit.

18. (New) The method of claim 16, wherein the dynamic brake is intelligent.

19. (New) The method of claim 16, further comprising: controlling the dynamic brake with the parallel controller.

20. (New) The method of claim 12 further comprising: providing a conditioning section.